2 Sheets—Sheet 1.

C. E. McBONN.
Grain-Planter.

No. 208,914. **Patented Oct. 15, 1878.**

Fig 1.

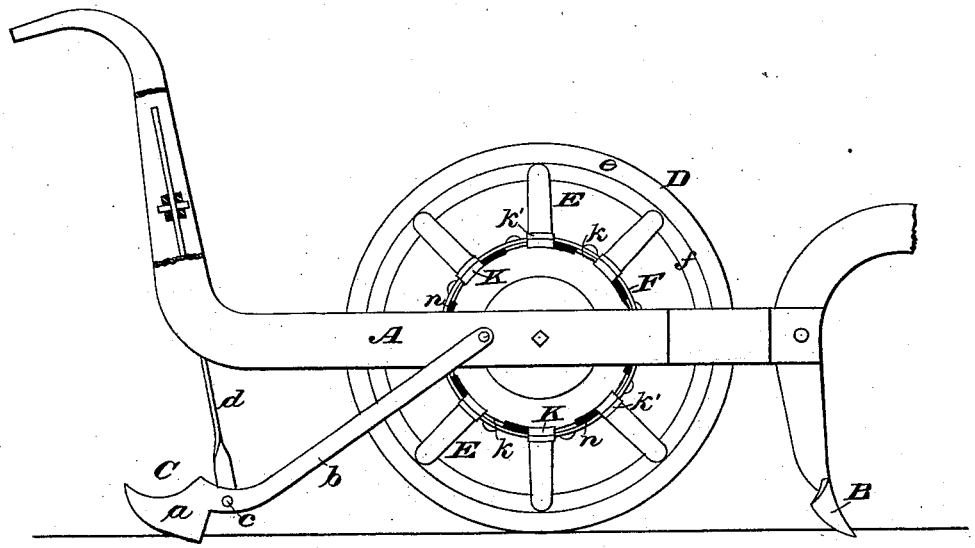
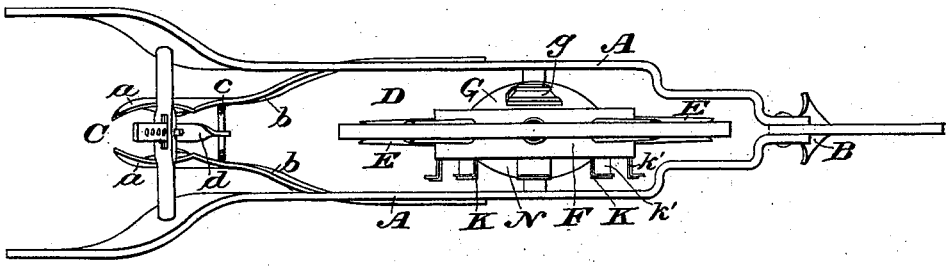


Fig 2.



WITNESSES

Wm A Skinkle

Geo. W. Brick

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Baldwin, Hopkins & Peyton.

2 Sheets—Sheet 2.

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Fig 4

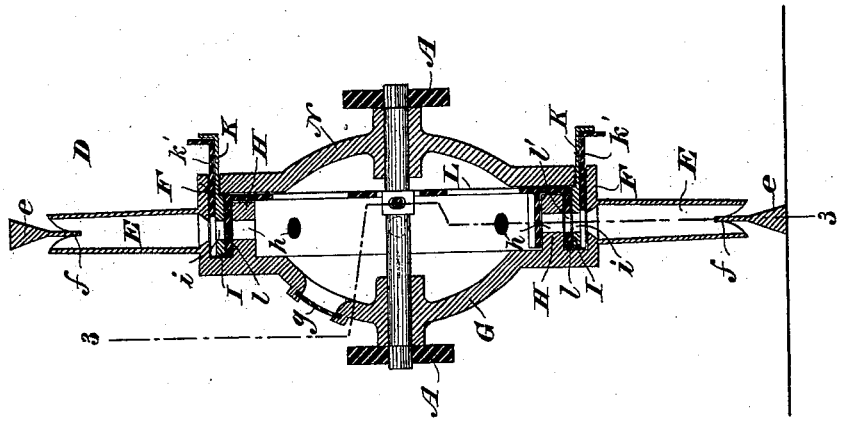
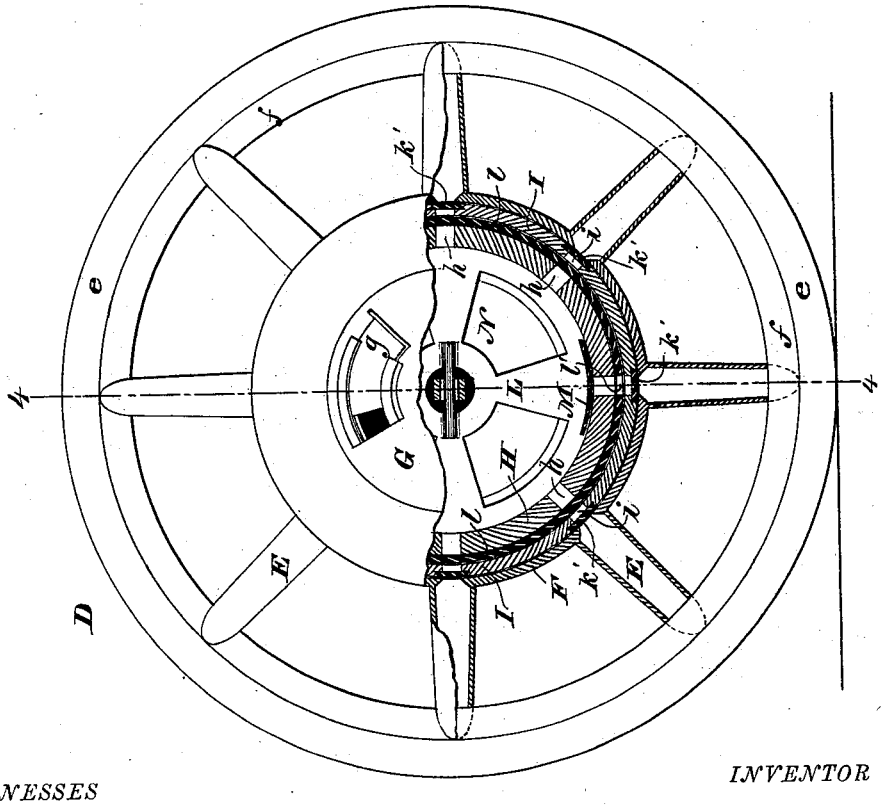


Fig 3



WITNESSES

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INVENTOR

Charles E. McBonn

By his Attorneys

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UNITED STATES PATENT OFFICE.

CHARLES E. McBONN, OF FOLLY MILLS, VIRGINIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO BROOKE ESKRIDGE, OF SAME PLACE.

IMPROVEMENT IN GRAIN-PLANTERS.

Specification forming part of Letters Patent No. **208,914,** dated October 15, 1878; application filed February 19, 1878.

To all whom it may concern:

Be it known that I, CHARLES E. McBONN, of Folly Mills, in the county of Augusta and State of Virginia, have invented certain new and useful Improvements in Grain-Planters, of which the following is a specification, that will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings.

My improvements relate to that class of planters in which the grain is dropped from a receptacle in the center of a traction-wheel down through tubes extending radially from the receptacle toward the periphery of the wheel; and they consist in the mechanical appliances hereinafter described and claimed, for securing the dropping in the desired quantity, and at the proper times or distances, and with the proper spread or distribution of the grain on the ground, and for altogether preventing the dropping when desired.

In the drawings, Figure 1 represents a side elevation of my improved machine with one of the handles partly broken away to show more clearly the connection between the cross-bar and the adjusting-rod of the coverer; Fig. 2, a plan view thereof; Fig. 3, a side elevation, on an enlarged scale, of the dropping-wheel, showing it as partly in section on the line 3 3 of Fig. 4; and Fig. 4 is a vertical transverse section through the same on the line 4 4 of Fig. 3.

A indicates the frame of the planter; B, the furrowing-blade, and C the coverer. The latter is composed of two suitably-shaped curved blades, *a*, secured to pivoted arms or pendants *b*, connected by a screw-bolt, *c*, so as to render them adjustable to different distances apart. Pivoted loosely on the screw-bolt is a slide-rod, *d*, passing up through a slot in the round or brace of the handles, and provided with pin-holes and a pin, whereby the coverer may also be adjusted vertically.

D indicates the traction drop-wheel, which may be cast with hollow spokes E, to form drop-tubes, or with solid spokes, and the drop-tubes may be attached. In either case the tubes preferably connect at their outer ends with the inner face of the felly, and pass through apertures in a central circular band, F. In order to avoid stopping up the outer ends of the tubes with earth, I permit them to extend only part way to the periphery of the drop-wheel, and I make the outer face of the felly wider than its inner face, so that it serves somewhat as a shield to the tubes. In further pursuance of this object of keeping open the delivery ends of the tubes, I form an incline, *e*, between the two felly faces, which tends to prevent the accumulation of earth to close the tubes. In order to properly distribute the dropped grain in the furrow, I prefer to straddle the outer ends of the tubes over the thin inner face of the felly, as shown at *f*, so that the kernels will fall on both sides of it.

The band F forms the body of a hollow cylinder, within which is carried the grain to be dropped, and the appliances for delivering it in the drop-tubes. One end of this cylinder is closed by a concave or dished disk, G, provided with an aperture and a cover or slide, *g*, for admitting and closing in the grain to be planted. This disk and the cylinder may be cast in one piece. Projecting from the inner face of this disk is a circular ledge, H, provided with apertures *h*, corresponding to the number and position of the drop-tubes, and arranged in a fixed coincident relation therewith. The thickness of this ledge is such that its apertures form little wells or pockets, of suitable size to contain the proper quantity of grain to be dropped, and they are always open at the top and closed at the bottom, except at the instant of dropping, when this condition is reversed, and they respectively become momentarily closed at the top and open at the bottom. Between this circular ledge and the interior of the cylinder is a circular band, I, also provided with apertures *i*, corresponding in number with the drop-tubes.

This band has projecting from one its edges a series of flat arms, K, corresponding in number and position with the apertures *i*, by means of which it may be turned a short distance forward and back between the stops *k* on the interior of the cylinder, to adjust its apertures in or out of coincidence with the drop-tubes, accordingly as it is desired to drop or to cease dropping the grain. The arms K may also serve as guideways for slides *k'*, working at

right angles to the inner ends of the drop-tubes, by which any desired number of them may be individually closed and rendered inoperative without closing all of them, as when the band I is operated. This arrangement of the slides *k'* enables the sizes of the apertures through the drop-tubes to be controlled so as to let more or less grain pass at each drop, as desired, and, as already indicated, to close up, for instance, every other tube, and thus change the distances of the drops in the furrow from one another.

Fixed upon the non-rotating axle of the drop-wheel, and contained within the cylinder, is a wheel, L, provided with a flange, *l*, through which is a single aperture, *l'*. In practice it may be better to have this single aperture elongated, or made larger than the diameter of the pockets *h*, in order to insure the complete emptying of the contents into the drop-tubes during rapid motion. The non-rotating wheel L is swiveled loosely on the fixed axle, so as to have a slight play, the object being to compensate for any wear of the axle-journal or its bearings, which otherwise might cause disturbing friction between the rotating parts and the flange and periphery of this wheel. The non-rotating wheel and axle should be so adjusted in place as to bring the aperture *l'* on the lower side of the wheel. Above this aperture is a cut-off, M, arranged to fit closely on the inner face of the ledge H, which is thus loosely clamped by and revolves between the fixed flange *l* and the cut-off M. The office of the cut-off is to close the top of each pocket *h* as it comes in coincidence with the aperture *l'*, and stop its supply of grain, while at the same time its bottom is opened, and it is emptied by gravity. Instead of this form of cut-off a brush may be employed.

N indicates another concave or dished disk, which closes the other end of the cylinder F, and is slightly cut away at portions of its margin *n*, to accommodate the oscillations of the arms K in the adjustment forward and back of the band I.

The operation of my dropping apparatus is as follows: The central receptacle being provided with the grain to be dropped, the band I being adjusted so as to bring its apertures in coincidence with the drop-tubes, the slides *k'*, or such of them as desired, being drawn out, and the drop-wheel running by traction loosely on its fixed axle, the grain will fill the pockets as they revolve to the lower part of their circuit, and as each comes to the cut-off it will be closed at its top, and then opened at its bottom by the aperture *l'*, and the grain will fall through the drop-tubes to the earth.

By forming the central stationary wheel, L, of a disk without openings, so as to constitute a partition, the central receptacle may be divided into two compartments; and, by the addition of corresponding operative parts within the second compartment, the apparatus may be adapted to drop fertilizers at the same time that it drops the grain, and both may fall through the same drop-tubes.

Having thus described the construction and mode of operation of my improvements, what I claim as of my invention is—

1. The traction drop-wheel composed of a felly wider at its outer than its inner face, with an incline between the two faces, a central band or hollow cylinder, and hollow spokes or tubes connecting the cylinder and inner face of the felly, so as to straddle the latter, substantially as described.

2. The combination, in a traction drop-wheel, of a central band or hollow cylinder and drop-tubes leading from the cylinder and connected with the felly, so as to drop grain on both sides of it, substantially as described.

3. The combination of the band I, provided with its apertures and arms, with the slides *d'* and stops *k* of the cylinder, whereby the adjustments for dropping are effected, substantially as described.

4. The combination of the cut-away disk N, the cylinder, and the band I and its adjusting-arms, substantially as described.

In testimony whereof I have hereunto subscribed my name.

CHARLES E. McBONN.

Witnesses:
WM. J. PEYTON,
G. M. MAYNADIER.